

Notice of Allowability

Application No.

10/501,349

Examiner

DAVID GOODWIN

Applicant(s)

WATANABE ET AL.

Art Unit

2818

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 12/17/07.
2. ☒ The allowed claim(s) is/are 1-11 and 13-17.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- * Certified copies not received: _____.

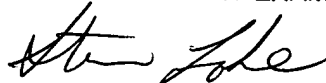
Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date 11/13/07 8/15/07
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

STEVEN LOKE
SUPERVISORY PATENT EXAMINER



DETAILED ACTION

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Rinku Parikh on 2/4/08.

Nonelected claims 18 through 30 have been cancelled.

Claim 8 line 9 has been amended to read: "semiconductor thin films other than a part of said active layer; and"

Allowable Subject Matter

1. Claims 1 through 11 and 13 through 17 are allowed.
2. The following is an examiner's statement of reasons for allowance:
3. A compound semiconductor stacked structure having a first compound semiconductor layer, an active layer, and a second compound semiconductor layer, which are successively stacked on a substrate, wherein said active layer consists of a compound semiconductor with a composition represented by $\text{In}_x\text{Ga}_{1-x}\text{As}_y\text{Sb}_{1-y}$ ($0.8 \leq x \leq 1.0$, $0.8 \leq y \leq 1.0$) and is thicker than 35 nm and thinner than 70 nm; said first and second compound semiconductor layers are each a compound semiconductor layer having Sb and at least two of five elements consisting of Al, Ga, In, As and P, and

Art Unit: 2818

have a band gap greater than that of said active layer, and a resistance at least five times greater than that of said active layer; and lattice constant differences between said active layer and said first and second compound semiconductor layers are set within a range of 0.2% to 0.9%.

4. A Hall device comprising: semiconductor thin films formed on a substrate including an active layer composed of $\text{In}_{x_1}\text{Ga}_{1-x_1}\text{As}_{y_1}\text{Sb}_{1-y_1}$ ($0 \leq x_1 \leq 1.0, 0 \leq y_1 \leq 1.0$), and first and second compound semiconductor layers that are formed on and under said active layer, and that each of the first and second compound semiconductor layers having a band gap greater than that of said active layer; a passivation covered directly a top surface and side surfaces of said semiconductor thin films other than a part of said active layer; and a metal electrode layer formed on said passivation and the part on said active layer, electrically isolated from said first and second compound semiconductor layers by said passivation, and makes contact only with said active layer of said semiconductor thin films.

5. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DAVID GOODWIN whose telephone number is

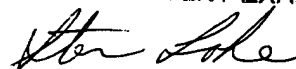
(571)272-8451. The examiner can normally be reached on Monday through Friday, 9:00am through 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Loke can be reached on (571)272-1657. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DJG

STEVEN LOKE
SUPERVISORY PATENT EXAMINER

A handwritten signature in black ink, appearing to read "Steven Loke", is written below the printed name and title.